AWM2P™
MICROMODULE

USER MANUAL 3

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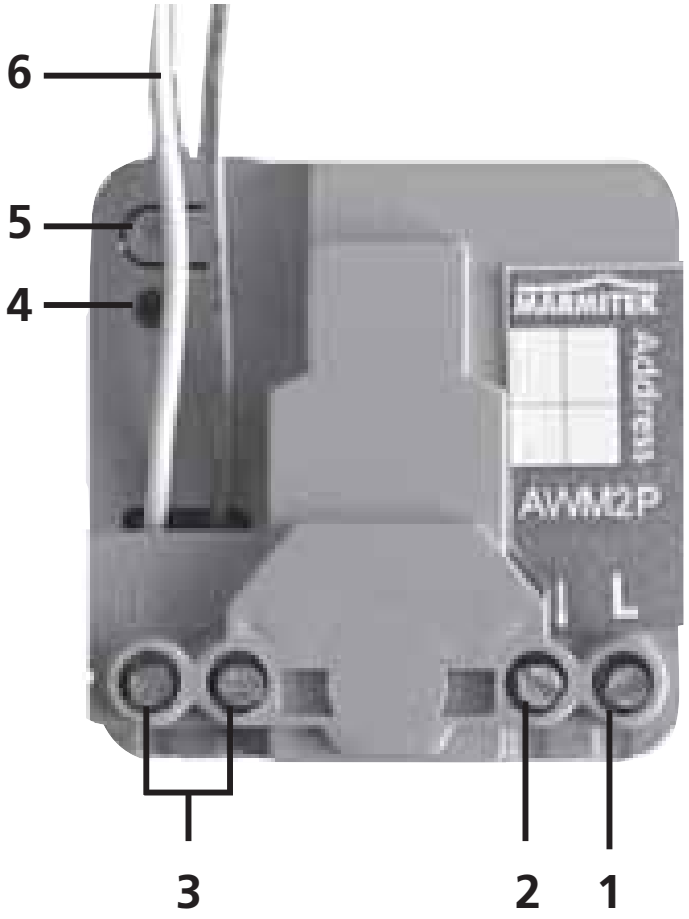
MICROMODULE AWM2P



ENGLISH

1. Phase clamp (230V)
2. Load clamp
3. Neutral clamps
4. Indicator light (LED)
5. Set up button
6. Wire connections to wall switches

NEDERLANDS

1. Fase aansluiting (230V)
2. Aansluiting voor belasting
3. Nulklemmen
4. LED indicator
5. Programmeerknopje
6. Aansluitdraden voor schakelaars

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MARMITEK MICROMODULE AWM2P

Marmitek X-10 transmitter for 2 addresses with a built-in appliance module.

SAFETY WARNINGS

- The wiring of your electrical installation is live (230 V) and extremely dangerous. Never connect the module when plugged into the mains. Always turn off the main switch before starting the installation.
- This product is for professional use and should be installed by a certified installer.
- To prevent short circuits, this product should only be used inside and only in dry spaces. Do not expose the components to rain or moisture. Do not use the product close to a bath, swimming pool etc.
- Do not expose the components of your systems to extremely high temperatures or bright light sources.
- In case of improper usage or if you have altered and repaired the product yourself, all guarantees expire. Marmitek does not accept responsibility in the case of improper usage of the product or when the product is used for purposes other than specified. Marmitek does not accept responsibility for additional damage other than covered by the legal product responsibility.
- This product is not a toy. Keep out of reach of children.
- Do not open the product: the device may contain live parts. The product should only be repaired or serviced by a qualified repairman.
- Automatic switching devices provide comfort, but can also be dangerous. They can surprise people or can ignite clothing hanging over an electric heat source. Please be careful and take appropriate measures to avoid accidents.

HOW DOES MARMITEK X-10 WORK?

Marmitek X-10 components use the existing mains wiring to communicate (using Marmitek X-10 signals). You can build a complete system using the three different kind of components of the Marmitek X-10 System:

1. Modules

These components will receive Marmitek X-10 signals and will switch or dim the attached lamp or appliance.

2. Controllers

These components will transmit Marmitek X-10 signals and thus will control the Modules.

3. Transmitters

Wireless components like remotes. The signals of these components will be received by a controller with transceiver functionality (IRRF 7243, TM13, CM15Pro or console of a Marmitek SecuritySystem). The Transceiver will translate the signals into Marmitek X-10 signals on the power line.

ADRESSES

Up to a maximum of 256 different addresses can be preset. These are subdivided into a so-called HouseCode (A to P incl.) and a UnitCode (1 to 16 incl.). The HouseCode can also be set on the controllers, so that the controllers and modules become part of the same system. The address can be set either using code dials or by pressing buttons, depending on the type of module.

The Marmitek X-10 System uses standard commands, which control all units with the same HouseCode at the same time (e.g. all lights on, all off, etc.).

SIGNAL RANGE

Range of Marmitek X-10 signals over the Power Line and how to increase the range.

The Marmitek X-10 System is based on power line communication. The range of the Marmitek X-10 signals very much depends on the local circumstances. On average the range is a cable length of 80 meters.

If you have difficulties with the range of your Marmitek X-10 signals, please pay attention to the following facts:

1. When several phases are used in the house, it can be necessary to couple these phases for Marmitek X-10 signals. You can

couple them with the use of a CAT 3000 active 3 phase coupler/ repeater (Art.No. 09304) and it is required if wall outlets and lighting points are actually divided into several phases (several groups is no problem for the Marmitek X-10 signal).

2. It is possible that Marmitek X-10 signals are attenuated by devices and lights which are connected to the power line. In a normal home situation this effect is negligible (the Marmitek X-10 system is using active gain control to eliminate the effects). However, it is possible that a particular device in your house is attenuating the signals so much that the range of Marmitek X-10 signals is decreased significantly. When you have range problems, it is wise to try to locate the device which is attenuating the signals simply by unplugging devices from the power line, and testing the differences in range for your Marmitek system. When e.g. your conclusion is that e.g. your computer monitor is attenuating the signal, you can use a FM10 Plug-in Filter between the power line and the monitor to eliminate the effects.

Known devices which can cause attenuation are:
PC Monitors
PCs with heavy internal power supplies
Old Televisions
Copiers
Fluorescent Lights
Gas Discharge Lamps (Energy Saving Lamps)

3. Some (old) devices are able to disturb the signal by transmitting noise on the power line. Because the Marmitek X-10 signals are transmitted on 120 kHz, only noise on or near this frequency will have influence on the range. When you use a FM10 Filter to connect this device to the power line, the noise will be filtered.

4. The Marmitek X-10 protocol has several mechanism to avoid modules to be switched on or off by other sources than your Marmitek X-10 Controllers. However, it is possible that the

Marmitek X-10 signals are disturbed by e.g. baby phones which are in TALK mode (continuous transmission). When these kind of signals are present on the power line it is possible that the Marmitek X-10 signals will not come through.

5. The mains do not stop at the front door of your home. Everything that is attached to mains nearby your home can have influence on Marmitek X-10 signals (e.g. heavy machinery). If you think that your system is influenced by devices out of your house, it is advisable to install FD10 Phase Coupler/Filter on each phase entering the house. These filters will block signals coming into or going out of your house, but will also match the impedance for the mains. Hereby make your house Marmitek X-10 compatible for these units. To couple the phases use a CAT 3000, see point 1 above.

INSTRUCTIONS FOR USE

APPLICATIONS/CHARACTERISTICS

- Because of its extremely small proportions the module can be built in behind built in switches and wall outlets (minimal depth flush switch with box 40mm, preferred: 50mm). The module is also ideal for building in light armatures and for installing in small spaces with for instance lowered ceilings.
- Multi-purpose: fully free choice, colour and model of switch material.
- To this module two switches can be connected. One controls the internal appliance module, but also controls the matching X-10 command through the power line. With the second switch ON/OFF commands can be sent for a second X-10 address.
- The address to be set up can be programmed through the power line with every Marmitek X-10 remote control (e.g. Marmitek EasyControl8™ remote control withTM13 transceiver).
- The AWM2P can react to one or more group commands (ALL LIGHTS ON, ALL UNITS OFF). These functions are disabled by default.

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- The AWM2P supports two way Marmitek X-10 communication.
- Both normal switches (on-off) and Momentary switches can be connected to the module. These are automatically recognized by the AWM2P.
- This module is suitable for installing two-way switches without wiring between the switches (MicroModules pass on their status to other MicroModules).
- The AWM2P can control Macro's/Scenario's by operating a conventional switch (with for instance Marmitek ActiveHomePro).
- The internal appliance module remembers its status after a main voltage cut-off.

Colour code wire connections

WARNING: THE WIRES OF THE MICROMODULE CARRY THE LIFE DANGER 230V MAIN- VOLTAGE!! ALWAYS SWITCH OFF THE MAIN MASTER SWITCH BEFORE INSTALLING THE MICROMODULE.

Description of the Marmitek MicroModule wires

Purple: Input 1, programmed base address + control of the built-in appliance module

The built-in appliance module will switch from ON to OFF or vise versa when the purple wire is connected with the phase wire. At the same time the programmed address will transmit the new status of the appliance module through the power line. Due to this Marmitek X-10 transmission you are able to switch other Marmitek X-10 modules (set to the same address). The new status will also be recognized by other MicroModuls or e.g. the computer interface (activating macro's, status indication and more).

White: Input 2, second address
When the red wire is connected to the phase wire, the programmed "address +1" will be transmitted (e.g. when A3 is programmed as the base address then the Marmitek X-10 address A4 will be sent by using input 2). If the status in the MicroModule was ON, an OFF command will be transmitted. If the status in the MicroModule was OFF, an ON command will be transmitted. Through this transmission, other Marmitek X-10 modules can be switched remotely over the power line or Macro's setup in the computer interface can be activated.

Mounting Instructions
WARNING! ALWAYS SWITCH OFF THE MAIN MASTER SWITCH BEFORE INSTALLING THE MICROMODULE.

To install the MicroModule AWM2P the following wiring is required.

1. **Neutral**
2. **Phase 230V**
3. **Load. This wire runs directly to the load.**

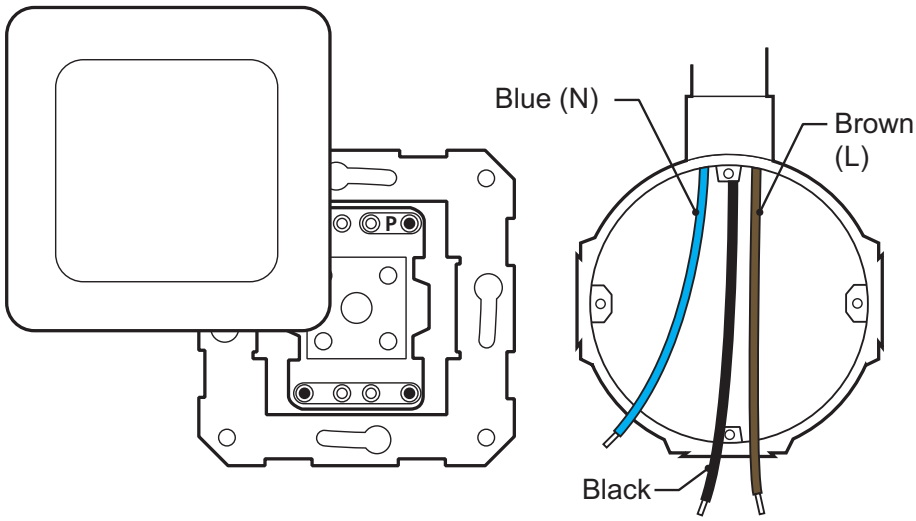

Figure 1

- Take the present switch (if one is installed) out of the wall outlet box.
- Disconnect all wires from the switch.
- Pull an additional Neutral-wire in case this one is missing.

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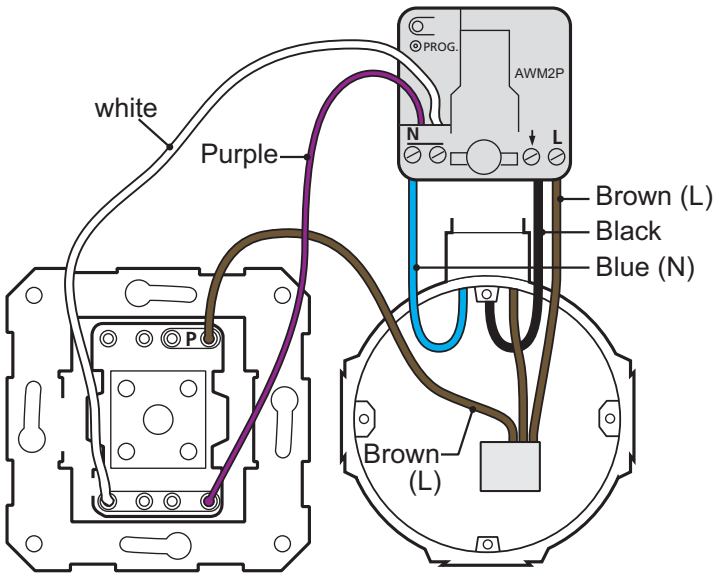

Figure 2

- Connect the phase, neutralize and load wire to the terminals of the MicroModule AWM2P.
- Connect the thin wires of the built-in module to the wall switch. Connect the phase wire to clamp P of the wall switch.

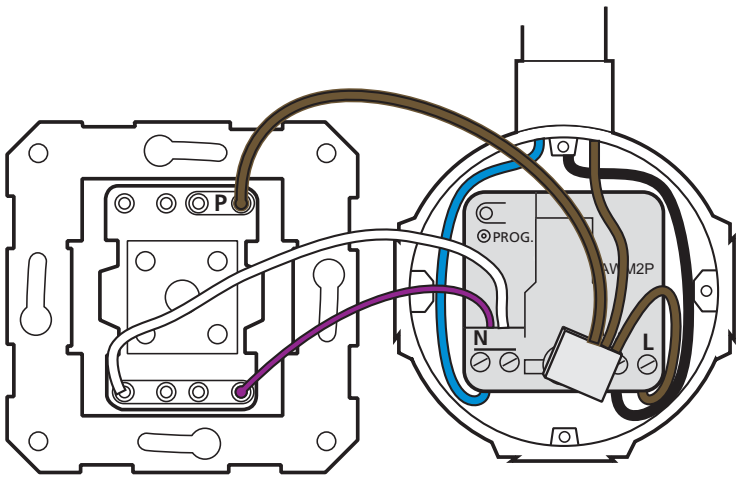

Figure 3

- Position the MicroModule against the back wall of the wall outlet behind all the wires.
- You are now able to program the MicroModule. For more information see chapter “Programming”.

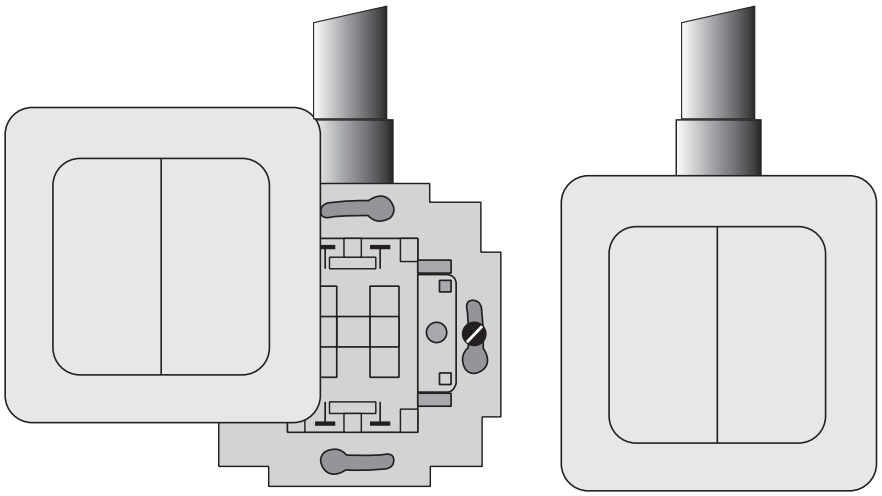

Figure 4

- Install the wall switch at its original place after the MicroModule is programmed.

Please note: due to heat generation, apply no more than one module per flush socket / central socket!

Programming

WARNING: DO NOT FORGET TO TURN ON THE MAIN MASTER SWITCH PRIOR TO PROGRAMMING.

Activate the setup mode.

The following steps have to be taken to start the setup procedure for programming the MicroModule:

- Press the setup (prog.) button for at least 3 seconds (see figure 5). The LED should stay on after releasing the setup button.
- Warning! The MicroModule will leave the setup mode if it doesn't receive any commands within 60 seconds.

Exit setup mode

- Press the setup button once shortly; The red LED will turn off now. You can also wait for at least 60 seconds so that the MicroModule will exit the setup mode automatically.

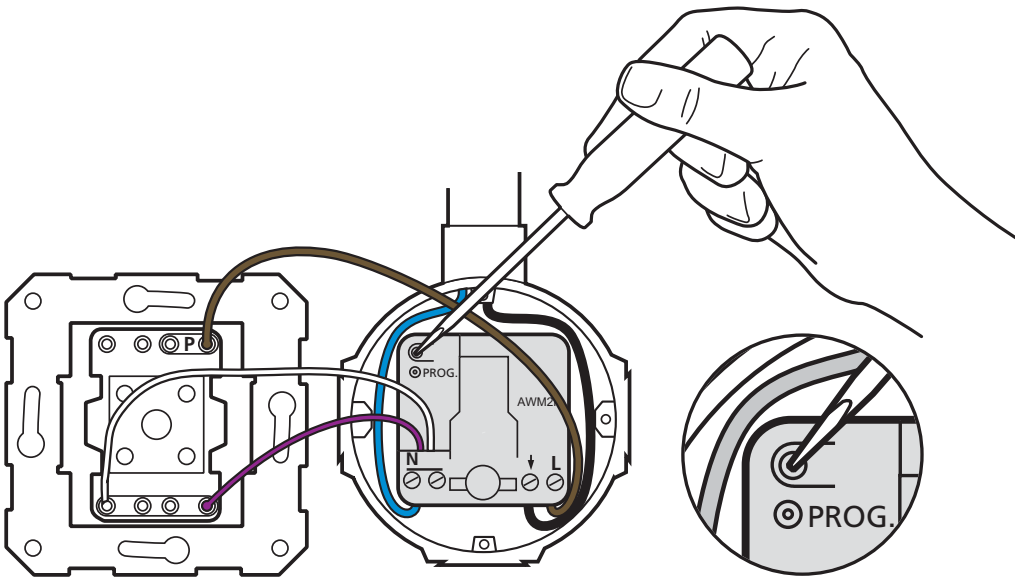

Figure 5

Activate or exit the setup mode.

Programming the X-10 address and the various options

The chart below shows the various possibilities to program the MicroModule AWM2P

defaults	Programmable	Command	Light blinks
Address A1	Address A2 to P16	2x Address	2x
Doesn't respond to "All Lights On"	Responds to "All Lights On"	2x "All lights on"	2x
Doesn't respond to "All Units Off"	Responds to "All Units Off"	2x "All Units Off"	4x

For programming the Marmitek X-10 address and options you will be able to use any Marmitek X-10 controller or remote control. For the following explanation we used a Marmitek 8-in-1 remote control to

program the preferred settings (When you use an RF remote control like the Marmitek 8-in-1, then a TM13 Plug-in Transceiver is required to convert the RF signals to the X-10 commands on the power line).

Example 1. Program the Marmitek X-10 address E4:

- Setup your remote control (see manual 8-in-1) and the TM13 transceiver to house code E.
- Start with the MicroModule in setup mode.
- Press the Marmitek X-10 button (marked with the symbol of a house) of the 8-in-1 remote control and then press button 4.
- Press the "ON" button 2x (= channel+).
- The MicroModule responds by blinking the LED twice.
- The address E4 is programmed.

Example 2. Program the function "All Units Off"

- Make sure you program the required Marmitek X-10 address first!! (e.g. E4).
- Leave the remote control and the TM13 Transceiver on HouseCode E or set it to the right HouseCode.
- Start with the MicroModule in setup mode.
- Press button marked with "All Units Off" 2x (= mute).
- The MicroModule responds by blinking the LED 4x.

NOTES:

- When you program the MicroModule, always program the address first followed by the optional functions.
- If the MicroModule receives a new address during setup mode, the optional functions will be automatically reset to the factory defaults.
- If you have programmed the address, but you wish to change it again you need to switch the AWM2P out of the programming mode and put it in the programming mode again.
- When programming the AWM2P, do not give the commands with too little time in between, keep 1 second pauses in between the commands.

When you wish to program the module with the help of a remote control in combination with an IRRF7243, you need to follow a slightly different procedure (for instance: setting up UnitCode 2 with an 8in1 Multimedia remote control):

- push the “house” on the remote control
- push button [2]
- give 2 x an [on] command
- close off with button [2]

An AWM2P cannot send ALL LIGHTS ON or ALL UNITS OFF signals for the second address itself. It can only receive this signal and based on this signal, adjust its internal status.

FREQENTLY ASKED QUESTIONS

What is the reason for modules to switch on/off spontaneously?
It is possible that a Marmitek X-10 System is installed at one of your neighbours using the same House Code. To solve this problem try to change the House Code of your system, or have FD10 Phase Coupler/ Filter installed at your incoming mains.

My modules will not respond to my controller.
Make sure that the House Code on all Modules and Controllers are set to the same House Code (A .. P).

My modules will not react to my remote / sensor.
When you use a remote or sensor, you should have at least one TM13 Transceiver, CM15Pro or Marmitek X-10 Security Console installed in your house. These components will translate the radio signals to the Marmitek X-10 signal on the power line. Using several remotes and sensors, you only need one central transceiver.

Am I able to increase the range of my remotes by using more Transceivers?
Yes, you can use more than one TM13 Transceiver in your home

when the range of your remotes is not sufficient. The TM13 is using so called collision detection to prevent signals to be disturbed when more than one TM13 is transmitting. TM13's will wait for a quite power line before transmitting their data. To prevent your Marmitek X-10 System to become slow or to prevent dimming from becoming less smooth, make sure that the TM13 units are placed as far away from each other as possible.

Can I use more switches to control the AWM2P?
Yes, you can connect more switches to the first switch. However, they all need to be normal switches (on-off) or all Momentary switches.

Do you still have questions?
Please check out www.marmitek.com for more information.

TECHNICAL DATA

Power:	230V ±10%, 50 Hz
Electricity consumption	< 30 mA capacitive
Switching power:	3600W 230V with temperature and mounting restrictions. 2300W/230V 500W ind cap
Signal transmission:	> 5Vpp in 5 Ohm at 120 kHz ± 1kHz
X-10 transmission:	1 pulse burst on 0˚ and 180˚
Signal sensitivity:	25mVpp … 6 Vpp at 120 kHz ± 4kHz
Signal / noise ratio:	1,35 : 1
X-10 Key codes:	All units Off, All Lights On, On, Off, Status Request.
Switch use:	normal switches (make/break) or Momentary switches
Connection range:	Up to 2,5 mm^2
Environment temperature:	-10°C to +35°C (operation) -20°C to +70°C (storage)
Dimensions:	46x46x16mm.

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Environmental Information for Customers in the European Union

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

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DECLARATION OF CONFORMITY

Hereby, Marmitek BV, declares that this AWM2P is in compliance with the essential requirements and other relevant provisions of the following Directives:

DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility

Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Bij deze verklaart Marmitek BV, dat deze AWM2P voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijnen:

RICHTLIJN 2004/108/EG VAN HET EUROPEES PARLEMENT EN DE RAAD van 15 december 2004 betreffende de onderlinge aanpassing van de wetgevingen van de lidstaten inzake elektromagnetische compatibiliteit

Richtlijn 2006/95/EG van het Europees Parlement en de Raad van 12 december 2006 betreffende de onderlinge aanpassing van de wettelijke voorschriften der lidstaten inzake elektrisch materiaal bestemd voor gebruik binnen bepaalde spanningsgrenzen

Richtlijn 2002/95/EG van het Europees Parlement en de Raad van 27 januari 2003 betreffende beperking van het gebruik van bepaalde gevaarlijke stoffen in elektrische en elektronische apparatuur

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